AN ASSESSMENT OF THE KNOWLEDGE, RISK PERCEPTION, PUBLIC TRUST AND PREVENTIVE PRACTICES AMONG CONSTRUCTION WORKERS TOWARDS COVID-19

A CASE STUDY OF TORORO-CEMENT ROUND-ABOUT CONSTRUCTION PROJECT

MANANA FRANCIS

REG. NO. S17/B44/112

A DISSERTATION SUBMITTED IN FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF BACHELORS OF SCIENCE IN OIL AND GAS MANAGEMENT AT THE INSTITUTE OF PETROLEUM STUDIES KAMPALA IN AFFILIATION TO UCU.

Feb, 2021

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BY

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Feb, 2021

DECLARATION

I **MANANA FRANCIS,** Registration Number **S17/B44/112**

hereby declare that this research is my own and all the contents presented are original except where stated by the references and that the same work has not been submitted for any award of a degree or diploma at this or any other University or Institution of higher learning.

Signed: _____

Date: _____

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CHAPTER ONE: INTRODUCTION

1.1 Background

As 2019 drew to a close, reports emerged of an outbreak of pneumonia of unknown cause, with cases clustered around Wuhan Huanan Seafood Wholesale Market that sold live fish,poultry and birds (Osler, 2019). While some of the earliest known cases had a link to a wholesalefood market in Wuhan, some did not. The first cases were observed as of December 8th but a first case was reported to the World Health Organization (WHO) Country Office in China on 31 December 2019 (WHO, 2020). The market was shut down on 1 January 2020 and on 7th January a new type of Corona Virus was detected by the Chinese authorities (Osler, 2019).

The outbreak was declared a Public Health Emergency of International Concern on 30 January 2020. On 11 February 2020, World Health Organization announced a name for the new coronavirus disease "COVID-19". Subsequently, it was named SARS-CoV-2. According to the World Health Organization (2020), the full genetic sequence of SARS-CoV-2 from the early human cases and the sequences of many other viruses isolated from human cases from China and all over the world since then show that SARS-CoV-2 has an ecological origin in bat populations.

On 11 March 2020, the World Health Organization declared the rapidly spreading coronavirus outbreak a pandemic. Globally, as of 6:51pm Central European Summer Time (CEST), 18 May 2020, there were 4,628,903 confirmed cases of COVID-19, including 312,009 deaths, reported to WHO (WHO, 2020). The confirmed number cases in different regions were 2,017,811 America; 1,890,467 Europe; 346,276 Eastern Mediterranean; 168,724 Western Pacific; 143,750 South-East Asia and 61,163 in Africa (ibid).

In East Africa, Kenya had 887 confirmed cases of COVID-19 with 50 deaths; Tanzania, 509 confirmed with 21 deaths; Rwanda 292 confirmed cases with 0 deaths; South Sudan 282 confirmed cases with 4 deaths; Burundi 42 confirmed cases with 1 death; while Uganda had227 confirmed cases of COVID-19 with 0 deaths from As of Mar 14 to 6:51pm CEST, 18 May 2020 (WHO, 2020).

Unlike many nations, Uganda has taken some pre-emptive preventive measure against the spread COVID-19. Three days before the first case was detected, the government imposed measures that involved the closure of public places like schools, churches, bars, public events

among others. Since 21st March 2020, when the first imported case was reported, further drastic measures have been taken to impose a lockdown and prevent further spread of the virus (14th Presidential Address on Covid 19 Situation in Uganda, 2020).

Tests have been conducted to enable early detection and management of COVID-19. The test targeted the members of the population who were at a higher risk of contracting the virus. These included people returning from abroad, their contacts, and members from the community who took voluntary test. Cargo truck drivers were having been added to the target populations anda rapid field assessment conducted to inform the National COVID-19 Taskforce of other measures that needed to be taken to curb the disease. By 16th May 2020, 87832 tested have been conducted. Of these, 227 cases have been confirmed positive of COVID-19. Of these 98 were Ugandans of which only 9 had obtained the virus locally. Others cases were from neighboring countries of Kenya, Tanzania, Rwanda, Burundi and Eretria. 63, of the confirmed positive cases were recovered (14th Presidential Address on Covid 19 Situation in Uganda, 2020).

Whereas the government of Uganda has several activities to prevent the spread of COVID-19, some construction projects have continued. Construction workers are a vulnerable group as they are faced with the elevated risk of COVID-19 virus exposure in close-knit and unhygienic worksite conditions (NCA, 2020). In such sites, the contractors in charge should prioritize the health and safety of their workforce by strictly adhering to the Ministry of Health's recommendation on social distancing as well as maintaining high safety standards. This would minimize transmission of the COVID-19 infection between workers on their sites and to third parties off the site.

The Tororo-Cement Round-About Construction Project is an initiative which was taken by the Tororo Cement Industries (U) Limited in conjunction with the Uganda national Roads Authority (UNRA) to ease traffic flow and reduce road traffic accidents at the entry of the industries and the parking areas along the Malaba-Jinja-Kampala Highway. Being along a major highway through which most Cargo flow in and out of Uganda to Kenya, it is one of the construction projects that had to continue despite the lockdown of the pandemic. It is therefore imperative that appropriate health and safety standards are maintained to minimize transmission of the COVID-19 infection at the site and to third parties off the site.

1.2 Statement of the Problem

Despite the increasing number of positive cases of COVID-19, construction works at the Tororo-Cement Round-About Construction Project continued. This posed a health risk to the construction workers, the neighboring community, their families, and other third parties. Construction workers face an elevated risk of COVID-19 virus due to exposure in close-knit and unhygienic worksite conditions. The risk at Tororo-Cement Round-About Construction site is further multiplied due to its location.

The site is located in Tororo District where over 40 cases have been detected at the Malaba Boarder Point and at least 2 positive cases within the community (as of 19. May 2020). Right next the site is a designated parking yard for the cargo trucks which receives over 300 trucks per day. The site is along a major highway next to a crowded peri-urban area. The site is also near porous borders which are characterized with smuggling and illegal entries into the country without any prior COVID-19 screening or testing.

Since the workers at the Tororo-Cement Round-About Construction Project face a high risk of exposure to COVID-19, relevant knowledge attitudes and practices (KAP) are essential to mitigate the health risks. It is therefore important that this survey is conducted to inform relevant site training and policies to protect the workers and avoid occupational exposure.

1.3 Objectives

1.3.1 General Objective

To assess the knowledge, risk perception, public trust and preventive practices among construction workers towards covid-19 at Tororo Cement Round-About Construction Project

1.3.2 Specific Objectives

1. To determine the level of knowledge among construction workers in regard to the management of COVID-19 at Tororo-Cement Round-About Construction Project
2. To analyze the perceptions of construction workers in regard to the management of COVID-19 at Tororo-Cement Round-About Construction Project
3. To analyze the level of public trust among construction workers in regard to the management of COVID-19 at Tororo-Cement Round-About Construction Project

4. To investigate the behavior of construction workers in regard to the management of COVID-19 at Tororo-Cement Round-About Construction Project
5. To analyze the relationships between knowledge, perceptions and preventive practices among construction workers in regard to the management of COVID-19 at Tororo-Cement Round-About Construction Project.

1.4 Research questions

1 What is the level of knowledge among construction workers in regard to the management of COVID-19 at Tororo-Cement Round-About Construction Project?
2 What are the perceptions of construction workers in regard to the management of COVID-19 at Tororo-Cement Round-About Construction Project?
3 What preventive behaviors have been adopted by construction workers in regard to the management of COVID-19 at Tororo-Cement Round-About Construction Project?
4 What is the level of public trust among construction workers in regard to the management of COVID-19 at Tororo-Cement Round-About Construction Project?
5 What is the relationship between knowledge, perceptions and preventive practices among construction workers in regard to the management of COVID-19 at Tororo-Cement Round-About Construction Project?

1.5 Hypotheses

H_0: The is no relationship between the knowledge, perceptions and preventive practices in regard to the management of COVID-19 at Tororo-Cement Round-About Construction Project among construction workers.?

1.6 Significance of the study

The study could inform the project developers and contractors of the training and safety precautions required to protect the workers and avoid occupational exposure to COVID-19. The study could also add to the body of local knowledge regarding the management of COVID-19 at construction sites and similar work places.

1.7 Scope of the study

The study will to cover the knowledge, risk perceptions and preventive practices among construction workers in regard to the management of covid-19 at the Tororo-Cement Round-

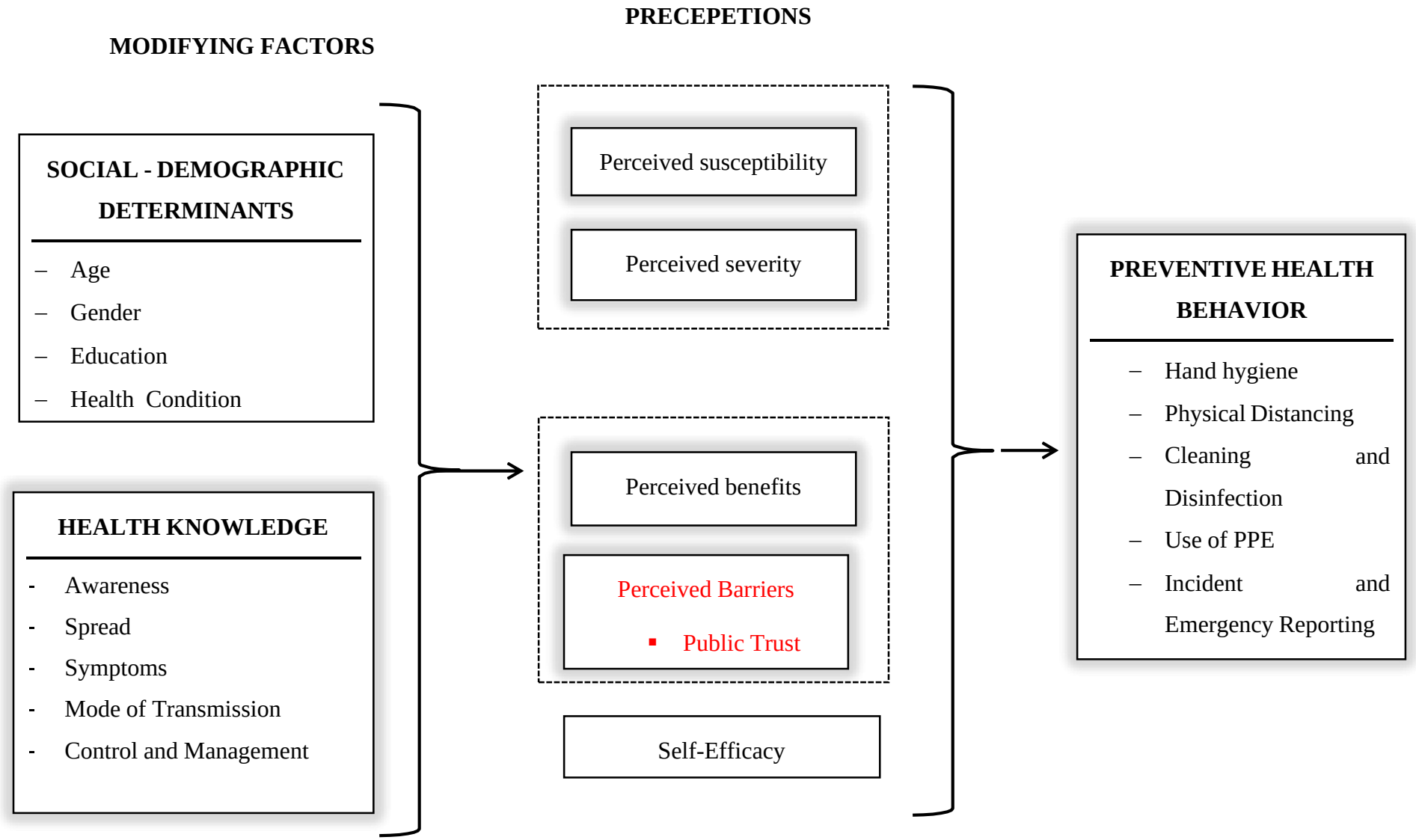
About Construction Project site at Tororo. The site is located approximately 204 kilometers by road, east of Kampala, the capital and largest city of Uganda. This is approximately 13 kilometers, by road, west of the border town of Malaba and the international border between Uganda and Kenya (Globefeed.com, 2018). The study will last for three months.

1.8 Theoretical framework

The study shall be based on the Health Belief Model (Rosenstock, 2005). The specific constructs of the HBM include perceived susceptibility, perceived severity, perceived benefits, perceived barriers, and self-efficacy. Perceived susceptibility and severity together have been labeled as perceived threat. Perceived susceptibility is linked to one's belief around the chances of contracting the virus. Perceived severity is based on one's belief of how serious the virus is along with the potential consequences of contracting it. Perceived benefits: focuses on how one interprets the pros of adopting the new preventive behavior. Perceived barriers: looks at the cons or the negative aspects of adopting the preventive behavior, which also includes the evaluation ofboth psychological and emotional costs. Self-efficacy addresses a person's level of self- confidence in adopting and successfully implementing physical distancing.

Therefore, for behavior change to occur and to be successful, people must see the coronavirus as a threat to their health, understand that adopting the new behavior (preventive measures) will result in positive outcomes/benefits, and feel confident in their ability to overcome any perceived barriers that may get in their way of taking action.

1.9 Conceptual framework



1.10 Operational definition of terms

Age: This shall be defined as the length of time that a person has lived. It shall be measured numerically in years from 1 to 99

Gender: this shall mean the identity of the research participants in relation their sex orientation with reference to social and cultural perspective rather than the biological. It shall be measured as male and female.

Level of Education: This shall be defined as the process of receiving systematic formal instruction, at a school or university: It shall be measured as by the highest level of education certificate attained by the participants as:

PLE Primary 7- 1; UCE (S1-S4): UACE (S.5-S.6); Tertiary Institution (Certificate – Diploma);

University

Knowledge: This shall be defined as the respondents, theoretical understanding of COVID-19. These shall be measured using frequency and proportions in relation to answers of the respondents to questions about COVID-19. The questions shall cover topics on Causation;Symptoms; Mode of transmission; Control and management of COVID-19

Risk Perceptions: This shall refer to a set of emotions, beliefs, and misconceptions towards COVID-19. It shall consider Perceived susceptibility; Perceived severity; Perceived benefits; Perceived barriers and cues to action towards the management of COVID-19. These shall be measured using frequency and proportions in relation to answers of the respondents to questions about COVID-19.

Practices: This shall refer to the actual application or use of an ideas, beliefs, or knowledge, relating to COVID-19. These shall be measured using frequency and proportions in relation to answers of the respondents to questions about COVID-19. The questions shall cover topics on: Hand hygiene, Physical distancing, Cleaning and disinfection, Use of PPE, Incident and Emergency Reporting. It shall also be supplemented by observations on of the respondents.

CHAPTER TWO: LITERATURE REVIEW

2.1 The History and Burden of Coronavirus Diseases 2019, COVID -19

On 31 December 2019, the World Health Organization (WHO) China Country Office was informed of cases of pneumonia unknown etiology (unknown cause) detected in Wuhan City, Hubei Province of China. From 31 December 2019 through 3 January 2020, a total of 44 case-patients with pneumonia of unknown etiology were reported to WHO by the national authorities in China. During this reported period, the causal agent was not identified (WHO, 2020). On 11 and 12 January 2020, WHO received further detailed information from the National Health Commission China that the outbreak is associated with exposures in one seafoodmarket in Wuhan City (Li, et al., 2020). The Chinese authorities identified a new type of coronavirus, which was isolated on 7 January 2020.

By early January, the virus had spread to the countries neighboring China. On 13 January 2020, the Ministry of Public Health, Thailand reported the first imported case of lab-confirmed novel coronavirus (2019-nCoV) from Wuhan, Hubei Province, China. On 15 January 2020, the Ministry of Health, Labour and Welfare, Japan (MHLW) reported an imported case of laboratory-confirmed 2019-novel coronavirus (2019-nCoV). On 20 January 2020, National IHR Focal Point (NFP) for Republic of Korea reported the first case of novel coronavirus in the Republic of Korea. On 11 February 2020, World Health Organization announced a name for the new coronavirus disease “COVID-19”. Subsequently, it was named SARS-CoV-2. Increasing numbers of cases have been reported in other countries across all continents. The outbreak was declared a Public Health Emergency of International Concern on 30 January 2020 (WHO, 2020).On 11 March 2020, the World Health Organization declared the rapidly spreading coronavirus outbreak a pandemic.

Globally, as of 6:51pm Central European Summer Time (CEST), 18 May 2020, there were 4,628,903 confirmed cases of COVID-19, including 312,009 deaths, reported to WHO (WHO, 2020). The confirmed number cases in different regions were 2,017,811 America; 1,890,467 Europe; 346,276 Eastern Mediterranean; 168,724 Western Pacific; 143,750 South- East Asia and 61,163 in Africa (ibid). In East Africa, Kenya had 887 confirmed cases of COVID-19 with 50 deaths; Tanzania, 509 confirmed with 21 deaths; Rwanda 292 confirmed cases with 0 deaths; South Sudan 282 confirmed cases with 4 deaths; Burundi 42 confirmed

cases with 1 deaths; while Uganda had 227 confirmed cases of COVID-19 with 0 deaths from Mar 14 to 6:51pm CEST, 18 May 2020 (WHO, 2020).

2.2 Knowledge about COVID-19

Knowledge of a disease in populations is essential for identifying and priority developing for prevention and care and also in establishing the right attitudes in adopting proper behavior. According to Bonita, Beaglehole and Kjellström (2006), it may be possible to control the disease with only a limited knowledge of the specific chain of infection.

2.2.1 Definition

Desai & Payal Patel (2020) have defined COVID-19 as a respiratory infection caused by the virus SARS-CoV-2, which was recently discovered after an outbreak began in Wuhan, China, in December 2019. SARS-CoV-2 is a type of coronavirus, which is a large family of viruses that cause illnesses ranging from the common cold to more severe infections in humans.. The incubation period for COVID-19 is thought to extend to 14 days, with a median time of 4-5 days from exposure to symptoms onset. One study reported that 97.5% of persons with COVID- 19 who develop symptoms will do so within 11.5 days of SARS-CoV-2 infection (Centre for Disease Control and Prevention, 2020)

The disease has a wide range of effects ranging from silent infections with no signs or symptoms to severe illness and death. The signs and symptoms of COVID-19 present at illness onset vary, but over the course of the disease, most persons with COVID-19 will experience the following: Fever (83–99%), Cough (59–82%), Fatigue (44–70%), Anorexia (40–84%), Shortness of breath (31–40%), Sputum production (28–33%) and Myalgia (11–35%) (Centre for Disease Control and Prevention, 2020). Not all people infected with COVID-19 will have the same symptoms. Fever, dry cough, shortness of breath, fatigue, or body aches are some of the most common symptoms; however, some people have experienced headache, abdominal pain, diarrhea, and sore throat as well. Symptoms typically appear 2 to 14 days after exposure,although some patients may not develop symptoms until later (ibid).

COVID-19 has been considered as a type of self-limiting infectious disease, and most cases with mild symptoms can recover in 1–2 weeks. SARS-CoV-2 infection can cause five different outcomes: asymptomatically infected persons (1.2%); mild to medium cases (80.9%); severe cases (13.8%); critical case (4.7%); and death (2.3% in all reported cases) (Jin, et al.,

2020). Several studies have reported that the signs and symptoms of COVID-19 in children are similar to adults and are usually milder compared to adults (Garg, et al., 2020).

2.2.1 The virus: Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)

The coronavirus that causes COVID-19 is a betacoronavirus in the same subgenus as the severe acute respiratory syndrome (SARS) virus (as well as several bat coronaviruses), but in a different clade. The Coronavirus Study Group of the International Committee on Taxonomy of Viruses has proposed that this virus be designated Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) (Zheng, 2020). It appears more distantly related the Middle East respiratory syndrome (MERS) virus another betacoronavirus (Rockx, et al., 2020). According to the World Health Organisation (2020), the full genetic sequence of SARS-CoV-2 from the early human cases and the sequences of many other viruses isolated from human cases from China and all over the world since then show that SARS-CoV-2 has an ecological origin in bat populations.

2.2.2 The Susceptible Hosts and High-Risk Populations

Currently, COVID-19 patients are the main source of infection, and severe patients are considered to be more contagious than mild ones. Asymptomatically infected persons or patients in incubation who show no signs or symptoms of respiratory infection proven to shed infectious virus, may also be potential sources of infection (Kimball, et al., 2020).

There is still no evidence that SARS-CoV-2 can be transmitted through aerosols or from mother to baby during pregnancy or childbirth. However, SARS-CoV-2 RNA was detected in milk samples of infected lactating women but whether breast feeding is a mode of virus transmission unclear (Groß, et al., 2020).

Persons who are in close contact with patients or subclinically symptomatic infected persons are part of the high-risk population (Kimball, et al., 2020). High infection risk is also considered in healthcare workers and the family members of patient (Heinzerling, et al., 2020; Lai, et al,, 2020). Based on preliminary U.S. data, persons with underlying health conditionssuch as diabetes mellitus, chronic lung disease, and cardiovascular disease, appear to be at higherrisk for severe COVID-19–associated disease than persons without these conditions (CDC COVID-19 Response Team, 2020). Smokers are also particularly susceptible to severe SARS- CoV-2 infections (Smith, Sausville, Girish, Vasudevan, John, & Sheltzer, 2020).

The hospitalization rates also increase with age and are highest among older adults. The vulnerability of older adults has been painfully demonstrated with several nursing homes associated outbreaks (Roxby, et al., 2020). According to Chen, et al., (2020), four parameters are predictors for the severity of COVID-19. These include: age, BMI, $CD4^+$ lymphocytes and IL-6. The high risk factors for developing to severe COVID-19 are: age $\geq$ 55 years, BMI > 27 kg / m^2, IL-6 $\geq$ 20 pg / ml, $CD4^+$ T cell $\leq$ 400 count / μ L.

In this preliminary description of pediatric U.S. COVID-19 cases, relatively few children with COVID-19 are hospitalized, and fewer children than adults experience fever, cough, or shortness of breath. Nonetheless, severe outcomes have been reported in children, including three deaths.

Another population at risk includes the "Essential workers" (The Lancet, 2020). These include the workers that had to continue with work despite the enforcement of lockdowns in different economies. Such people had to leave their homes to help maintain a semblance of normality for others, at great risk to themselves and their families. They included but were not limited to health care workers, custodial staff; child-care workers; grocery clerks and supermarket workers; delivery people, factory and farm workers, and restaurant staff and some construction workers and cargo transport staff (ibid).

Transport staffs have been particularly hard hit (The Lancet, 2020). In New York City, 120 employees of the Metropolitan Transportation Authority (MTA) have died due to COVID- 19, and nearly 4000 have tested positive. At least 28 London bus drivers have died due to COVID-19, and a UK railway worker, Belly Mujinga, died after being spat on by a passenger who claimed to have COVID-19, leaving behind an 11-year-old daughter (ibid). In Uganda By 16th May 2020, of the 227 cases that had been confirmed positive of COVID-19, over 160 were truck drivers (14th Presidential Address on Covid 19 Situation in Uganda, 2020).

Statistically, the COVID-19 pandemic has had a disproportionate impact in terms of death and severe illness on ethnic minorities in the UK and the USA. In the US city of Chicago, where the black population is roughly 30%, nearly 70% of COVID-19 deaths were in this demographic. A report released by the UK Intensive Care National Audit and Research Centre on April 17, 2020, showed that 34% of patients in the UK receiving advanced respiratory supportwere non-white, despite the non-white population nationally being about 14%. Upon review and

adjustment of the data for age, some socio-demographic characteristics, and measures of self-reported health and disability, black people were almost twice as likely as white people to have a COVID-19-related death. These disparities have been attributed to socioeconomic factors such as limited access to healthy food, housing density, the need to work or else, the inability to practice social distancing factors and not race (Saini, 2020; Yancy, 2020).

2.2.3 Mode of Transmission

COVID-19 spread with unprecedented speed around the globe. Various factors contributed to accelerated spread, including continued travel-associated importations, large gatherings, introductions into high-risk workplaces and densely populated areas, and cryptic transmission resulting from limited testing and asymptomatic and presymptomatic spread. The first confirmed coronavirus disease 2019 (COVID-19) case in the United States was reported on January 21, 2020. The outbreak appeared contained through February, and then accelerated rapidly (Schuchat & Team, 2020).

Current evidence suggests the disease is contagious and respiratory as it can be spread through directly respiratory droplets and aerosols which are typically released when an infected person coughs or sneezes between people who are within about 6 feet of each other (Hamner, et al., 2020; Dyal, et al., 2020; James, et al., 2020; Ghinai, et al., 2020). It can also be transmitted indirectly through contact with surfaces or supplies that have been contaminated the virus such as handrails, telephones or doorknobs and then touching the mouth, nose, or eyes with the contaminated hands (Desai & Aronoff, Food Safety and COVID-19, 2020).

COVID-19 patients are the main source of infection, and severe patients are considered to be more contagious than mild ones. Recent reports indicate that SARS-CoV-2 can be detected in the urine and stool of laboratory confirmed patients, implying a risk of fecal–oral transmission. However, it is not yet certain that the consumption of virus-contaminated foods will cause infection and transmission (Jin, et al., 2020).

Wei, Li, Chiew, Yong, Toh, & Vernon J. Lee, (2020) investigated 243 cases of COVID-19 reported in Singapore during January 23–March 16. They identified seven clusters of cases in which presymptomatic transmission was the most likely explanation for the occurrence of secondary cases. The study indicated that the possibility of presymptomatic transmission could increase the challenges of containment measures. Therefore, Public health officials conducting

contact tracing should strongly consider including a period before symptom onset to account for the possibility of presymptomatic transmission.

There are concerns that the virus may be aerosolized during certain activities such as singing. Hamner, et al., (2020) reported a high SARS-CoV-2 attack rate following exposure at a choir practice — Skagit County, Washington, March 2020. According to the report, following a 2.5-hour choir practice attended by 61 persons, including a symptomatic index patient, 32 confirmed and 20 probable secondary COVID-19 cases occurred (attack rate = 53.3% to 86.7%); three patients were hospitalized, and two died. Transmission was likely facilitated by close proximity (within 6 feet) during practice and augmented by the act of singing.

2.2.4 Environment

The environments we live and work strongly influence the causation of disease (Bonita, Beaglehole, & Kjellström, 2006). Facilities characterized by crowding, shared environments and potential introductions by staff members and new intakes face challenges in controlling the spread of infectious diseases such as COVID-19 (Wallace, et al., 2020). Such facilities should be identified promptly and prevention measures should be applied consistently to persons, staff members, and the communities to which they return (ibid).

Prolonged unprotected contact with patients in health facilities, as well as certain exposures, including some aerosol-generating activities, is associated with SARS-CoV-2 infections at workplaces (Lai, Wang, Qin, & al, 2020). Once a facility has confirmed a COVID-19 case, all residents should be cared and tested for using CDC-recommended guidelines. Symptom-based screening of residents might fail to identify all SARS-CoV-2 infections yet asymptomatic and presymptomatic residents might contribute to SARS-CoV-2 transmission (Kimball, et al., 2020).

Community transmissions have also been associated with religious worship services. James, et al. (2020) reported a high COVID-19 attack rate among attendees ata church at Arkansas, March 2020. According to the report, 92 attendees at a rural Arkansas church during March 6–11, 35 (38%) developed laboratory-confirmed COVID-19, and three persons died. Highest attack rates were in persons aged 19–64 years (59%) and ≥65 years (50%). An additional 26 cases linked to the church occurred in the community, including one death.

Public gathhering and events have also been identified as accererators of the spread of COVID -19 within communities. Ghinai, et al., (2020) investigated community transmission of SARS-CoV-2 at two family gatherings — chicago, illinois, february–march 2020. The investigation identified a cluster of 16 confirmed or probable cases, including three deaths, likely resulting from one introduction. Extended family gatherings including a funeral and a birthday party likely facilitated transmission of SARS-CoV-2 in this cluster.

One can get a COVID-19 at their living facilities. Following identification of two COVID-19 cases in a Seattle independent and assisted living facility, stringent preventive measures were implemented. Testing of all residents and staff members found few cases of COVID-19. Three of four residents who had positive test results were asymptomatic. Symptom- based screening might not identify SARS-CoV-2 infections in independent and assisted living facility residents, underscoring the importance of adhering to CDC guidance to prevent COVID- 19 transmission in senior living communities (Roxby, et al., 2020)

Workplaces have also been identified to as potential environments for the spread of COVID -19. Dyal, et al., (2020) studied and reported COVID-19 among workers in meat and poultry processing facilities in 19 states, April 2020.According to the study COVID-19 cases among U.S. workers in 115 meat and poultry processing facilities were reported by 19 states. Among approximately 130,000 workers at these facilities, 4,913 cases and 20 deaths occurred. Factors potentially affecting risk for infection included difficulties with workplace physical distancing and hygiene and crowded living and transportation conditions.

Gross (2020) reported an upside of global coronavirus crisis in relationship to the natural world and the environment. He reported stories of conservation successes, receding pollution and wild animals exploring deserted cities. During the crisis, planes stayed grounded, pollution subsided, blue skies and wildlife become more visible, formerly maligned immigrants were respected key workers at the frontline of the disease. Global risks that were not taken seriously before including climate change and antibiotics resistance became more relevant. Once the pandemic is over, we need to remember these lessons and apply them to address other equally dangerous challenges.

2.3 Risk Perceptions towards COVID-19

Mukhtar (2020) suggests applying the Health Belief Model to mitigating behaviors for preventing COVID-19. The model posits that the willingness of individuals to adapt to a health behavior is determined by their perceived susceptibility, severity, benefits, barriers, and self-efficacy towards the disease (Rosenstock, 2005). Therefore, attitudes of importance in the management of COVID-19 should provoke anxiety, fear and convert individual beliefs informed by preconceived impressions of a perceived threat; and direct perceived benefits from perceived barriers toward desired health behavior through perceived self-efficacy (Mukhtar, 2020). Effective mitigation of disease and COVID-19 mitigating behaviors require significant efforts to strengthen beliefs about disease which includes the severity and susceptibility of threat, eliminatebarriers to act and reinforce self-efficacy beliefs.

2.3.1 Perceived Threat

Perceived susceptibility and severity together have been labeled as perceived threat (Rosenstock, 2005). These attitudes modify behaviors in a way that an individual is more likely to take healthy outcomes serious if the perceived threat is greater. The perceived threat shall be bigger if the perceived severity is bigger, as perceived threat is bigger if the perceived susceptibility is bigger –thus an individual experience adverse outcome. Understanding how people perceive the threat of the coronavirus disease (COVID-19) can guide the public health policymakers in taking the required measures to limit the magnitude of this outbreak (Shabu, Amen, Mahmood, & Shabila, 2020).

2.3.2 Perceived Benefits

Perceived benefits are how one interprets the pros of adopting the new preventive behavior. Perceived benefits regarding behaviors towards the prevention of COVID-19 relate to public perception of benefits such as healthy adherence with quarantine by spending time with family members, or quality time spend alone to cultivate desiring hobbies or habits (Mukhtar, 2020).

2.3.3 Perceived Barriers

Perceived barriers are the cons or the negative aspects of adopting the preventive behavior. They consider the difficulties people face in adhering to the guidelines and instructions for protection and avoidance of coronavirus infection (Costa, 2020). The barriers include lack of

access to correct information, concerns about unemployment or loss of wages, lack of ability to pay for testing and diagnostics, ongoing career responsibilities, fear of stigma and discrimination if they are tested positive, lack of sanitation infrastructure, poor knowledge regarding transmission and limited infection control material (Saqlain, Munir, Rehman, Ahmed, Tahir, & Mashhood, 2020; UNAIDS, 2020).

The barriers also include the evaluation of both psychological and emotional costs. The economic and psychosocial consequences of the COVID-19 pandemic have been far-reaching and unprecedented around the world. The psychological aspects of the COVID-19 pandemic include fear, worry and dreadfulness. Reactions like panic buying have were due to the storm of dreadfulness combined with the fear of the unknown. Pakpour & Griffiths, 2020; Schweizer & Montibeller, 2020; Khosravi 2020).

According to the World Economic Forum (2020), the public sees coronavirus as a greater threat to the economy than to their health. The IPSOS poll of 10,000 adults in 12 countries, conducted 12-14 March, suggested rising anxiety about personal financial exposure, including employment. COVID-19 effected significant changes people's daily lives as movements were restricted in support of efforts to contain and slow down the spread of the virus. Faced with these new realities of working from home, temporary unemployment, home-schooling of children, and lack of physical contact with other family members, friends and colleagues, there is an increase in fear, worry, and stress. Since the economic impact of coronavirus is a rising strain across the world, governments are expected to implement economic rescue measures to calm the concerns.

2.3.4 Public Trust

According to Khosravi (2020), trust contributes to shaping an accurate risk perception of the disease. Trust plays an important part in managing a threat by affecting the public's judgments about the risks and the related benefits. It can indirectly impact the adoption of the recommended measures. Trust is believed as the main core of hearing, interpreting, and responding to public health messages. This has resulted in a growing dependency of the effective risk and crisis communication on the method of receiving information and the level of trust in thegovernment during the pandemic period. Government leaders need to understand that despite all the uncertainty, communication must be clear, non-conflicting and harmonized between the government, scientists and media (Schweizer & Montibeller, 2020). Therefore, governments

must provide complete information about the pandemic to maintain public trust, even when the information is very limited (Khosravi, 2020).

According to Mansdorf, (2020) many commentators and national leaders around the world recognize the threat of the coronavirus (COVID-19) as a genuine national security threat. The threat is considered from citizens who refuse to comply with guidelines and instructions and fail to change their behavior to adapt to the developing situation. From a psychological perspective, "outright refusers" are in denial regarding the effects of COVID-19. They intentionally violate the guidelines creating risk for others, with an "it won't happen to me" attitude. Classifying the refusers' behavior as a risk and treating them as a genuine threat should be a national priority. Education and social pressure cannot be solely depended upon to mitigate this risk to the public, law enforcement and government authorities may have to intervene.

2.3.5 Self-efficacy

Self-efficacy has been proven to play an important role in various human endeavors. It is an essential attitude in implementing the preventive measures towards COVID-19 (Xiao, Zhang, Kong, Li, & Yang, 2020). Perceived self-efficacy is "the belief in one's capabilities to organize and execute the courses of action required to manage prospective situations" (Bandura, 1999). People with a strong sense of self-efficacy tend to develop deeper interest in the activities in which they participate, form a stronger sense of commitment to their interests and activities, recover quickly from setbacks and disappointments and view challenging problems as tasks to bemastered. In order for individuals to build their "self-efficacy" during this pandemic, Hladek, (2020) suggests that they reflect on the past hard times, picking out the positive ways that they coped and apply them to the current situation. Seek out others who have dealt with similar challenges successfully and learn from them. Seek insight and encouragement.

2. 4 Prevetion Practices, Management and Control Measures

Like other infectious diseases, COVID-19 occurs as a result of interaction between the infectious agent (the virus), transmission process, the host and the environment. Therefore the control and management of COVID-19 may involve interrupting any of these components. The major thrust is to understand the process of infection and develop implement and evaluate appropriate control measures (Bonita, Beaglehole, & Kjellström, 2006). A comprehensive approach may be required for the prevention and control of COVID-19.

2.4.1 Primordial Prevention

Primordial global prevention approaches for managing the pandemic would require international solidarity. Indeed COVID-19 was becoming a catalyst for such international solidarity until, President Trump wrote an explosive letter to WHO's Director-General claiming that WHO had repeated missteps in responding to the pandemic which had turned out to be extremely costly to the world. As a result he eventually decided freeze of United States funding to the World Health Organization. He alleged that that WHO had "consistently ignored credible reports of the virus spreading in Wuhan in early December 2019 or even earlier, including reports from the Lancet medical journal. That, he World Health Organization failed to independently investigate credible reports that conflicted directly with the Chinese government's official accounts, even those that came from sources within Wuhan itself." (Horton, 2020)

In response, the WHO Director-General Tedros Adhanom Ghebreyesus gave a forceful defence of the agency. He accepted that "we all have lessons to learn", but argued that WHO had stood "shoulder-to-shoulder with countries". The agency had acted quickly, Tedros said. He promised to initiate an "independent evaluation" of the global response. "The world must never be the same." There was no need for new plans, procedures, or institutions. What mattered now was to strengthen existing mechanisms, especially national public health capacities specified in the 2005 International Health Regulations. Investing in health was a prerequisite for development. Horton, (2020), also commented about Trump's letter saying that it was factually incorrect as the *The Lancet* did not publish any report in December, 2019, referring to a virus or outbreak in Wuhan or anywhere else in China. The first reports the journal published were onJan 24, 2020.

According to Liao, Zhang, Marley, & Tang (2020), different countries globally need to adopt different strategies tailored and implemented in countries with different situations tocombat the COVID-19 pandemic. Countries with an ongoing explosion of the outbreak (i.e. the USA, Spain, and Italy), strategies suggested by the World Health Organization (WHO) which have been proven useful in China should be adopted for implementation. Secondly, countries in the regions that are still at the early stages of the outbreak (i.e., the Africa region, where many countries have only found imported cases) should further strengthen travel restrictions to reduce the risk of imported cases as well as the risk of developing local transmission. Furthermore, countries that have achieved great success in COVID control (i.e. China, South Korea, and

Singapore) should continue implement the successful strategies and further roll-out strengthened new strategies to prevent new imported cases. In addition, surveillance on the genomic changes of SARS-CoV-2 is in need in all countries as some studies have found multiple mutants of SARS-CoV-2, although the impact of the mutation on the infectivity and lethality of the virus was still unclear.

According to Galea (2020), our focus should always have been, and more importantly should now be, on building a world that is resilient to these challenges. Our focus should be on health as a state of not being sick to begin with, grounded in an approach that balances the health of all in all our actions. We must recognize that unless we invest in the preventive conditions of health—like safe housing, good schools, liveable wages, gender equity, clean air, drinkable water, and a more equal economy—any action we take during this and any future pandemic is likely to widen entrenched health gaps. And that situation should be unacceptable to all of us.

2.4.2 Primary Prevention

The effectiveness of vaccination as tool for controlling infectious diseases has been demonstrated by the management of other infectious diseases such as measles (Quadros, 2004). Before measles vaccine was introduced, nearly everyone contracted the disease at some point in childhood. Progress to date has been remarkable and the disease is no longer endemic in most countries. Likewise searching for an effective and safe vaccine against COVID-19 is the best hope of putting a stop to the global pandemic (Lynas, 2020). The World Health Organization activated Research and Development (R&D) Blueprint to accelerate the development of diagnostics, vaccines and therapeutics for this novel coronavirus (WHO, 2020). As such, a groupof experts with diverse backgrounds is working towards the development of vaccines against COVID-19.

An alternative strategy which some countries such as the Netherlands suggested to control the spread of COVID-19 was to gradually let the population build up herd immunity by forgoing a complete lockdown and allowing some infections to take place, preferably in low-risk groups such as children or young adults (Cohen & Kupferschmidt, 2020). The more people who are immune, the fewer people a virus can infect. Estimates suggested that 60% or more of the population would need to be immune to reach herd immunity for COVID-19, approximately 200 million individuals in the US (Rio & Malani, 2020). However given that the case fatality rate

(CFR) of COVID-19 can be anything between 0.25–3.0% of a country's population, enhancing herd immunity to control the COVID-19 epidemic carries an enormous potential human toll.

Non-pharmaceutical interventions including border restrictions, quarantine and isolation, distancing, hand washing, respiratory hygiene, environmental cleaning in community settings, avoidance of congregate settings, and face coverings in public settings where social distancing measures are particularly important and changes in population behavior have been associated with reduced transmission of COVID-19 and community mobility (CDC COVID-19 Response Team, 2020; Cowling, et al., 2020; Garg, et al., 2020; Lasry, et al., 2020). Public policies are essential to increase compliance with communities and at work places (Lasry, et al., 2020).

Whereas prevention activities should prioritize the communities and categories of people at higher risk for severe COVID-19 such as the older adults and persons with underlying medical conditions as suggested by Gold, et al., (2020) all age groups and patients with less serious illnesses and those without symptoms should be equally targeted to help slow the spread of COVID-19 because they are all likely to play an important role in disease transmission (CDC COVID-19 Response Team, 2020). Stringent strategies should be implemented to facilitate infection prevention and control for people with unstable housing and people who live incongregate settings, where physical distancing is inconsistent or impossible such as dormitories, jails, prisons, detention centers, long-term care facilities, and behavioral health facilities (Gandhi,Lynch, & Rio, 2020).

Ortega, Gonzalez, Nozari, & Canelli, (2020) describe the use of Personal Protective Equipment (PPE) by healthcare workers to avoid SARS-CoV-2 infections. This has been termed as donning and doffing. The PPE used to prevent exposure includes gloves, a gown, a respirator with a rating of N95 or higher, and a full face shield or goggles. When respirators are not available, face masks are an acceptable alternative. Health care administrators, infection prevention experts, distributors, manufacturers, and government agencies should develop a robust PPE supply chain. (Mehrotra, Malani, & Yadav, 2020)

The importance of wearing facemasks in a public setting to limit the spread of COVID-19 has been highlighted by Desai & Aronoff (2020). Wearing a mask could limit the spread of the virus from someone who knows or does not know they have an infection to others. Masks also remind others to continue practicing physical distancing. It is recommended that Medical masks

(including surgical face masks and N95s) are left for the patients of COVID-19 health care workers providing care for the patients of shortages in supply. Cloth face coverings can be made from household items such as 2 layers of cotton fabric, T-shirts, bandanas, or bedsheets. Masks should be secured with ear loops or ties for general use in public. Whatever material a face mask is made from, it should fit well and cover the nose and mouth. Masks should not be worn by children younger than 2 years or by individuals who are unable to remove the mask by themselves or are unconscious

Before putting on a face mask, users are advised to wash your hands with soap and water for at least 20 seconds or use an alcohol-based hand sanitizer (with at least 60% alcohol). Without touching the front of the mask, secure the ties behind one's ears or head. While wearing the mask, do not touch the mask or your face. When removing the mask, take off the ear loops orties first. Do not touch the front of the mask or your face when removing the mask. After removing the mask wash your hands with soap and water for at least 20 seconds (or use hand sanitizer). Face masks should be washed routinely with soap and water or laundry detergent to prevent contamination (Desai & Aronoff, Masks and Coronavirus Disease 2019 (COVID-19), 2020).

Desai & Payal Patel (2020) highlight some practices individuals can adopt to avoid COVID-19 infections. Idividuals are advised to : 1) wash hands for at least 20 seconds with soap and water or hand sanitizer that contains at least 60% alcohol often (especially after touching common surface areas, using the bathroom, shaking hands, and other social interactions). 2) Avoid large crowds, crowded public places, and maintain at least 6 feet of distance with others, especially if they are coughing or sneezing. This is known as "social distancing". 3.) If are older or have underlying medical problems, take extra care to avoid these situations, including nonessential air travel or cruises. 4) Avoid touching your eyes, nose, and mouth with unwashed hands, because contaminated hands can transfer virus to these areas and make you sick. 5.) If are sneezing or coughing, cover one's mouth and dispose of tissues after used once. 6) Avoid shaking hands when greeting others.7) Disinfect surfaces that are used regularly, using household sprays or wipes. Individuals are also discouraged from wearing a medical mask unlesswith respiratory symptoms, or one is a health care worker, or are in close contact with or caring for someone with COVID-19, is not indicated. Wearing gloves in public is not effective

protection from COVID-19, because gloves can be contaminated (Desai & Payal Patel, Stopping the Spread of COVID-19, 2020).

When Shopping, Desai & Aronoff (2020) advise that shoppers should maintain at least 6 feet of distance apart. They should avoid shaking hands, hugs, or other physical contact. Try to wipe frequently touched surfaces like grocery carts or basket handles with disinfectant wipes, if available. Avoid touching the face. Wear a cloth mask and use hand sanitizer if available when before leaving the store or while waiting in the checkout line. Individuals are encouraged to avoid shopping in public if they have symptoms such as fever or cough. Adults older than 65 years and persons with chronic medical conditions are particularly vulnerable to severe disease from COVID-19. Adults should limit shopping in public. They are advised to request a neighbor or friend to pick up groceries and leave them outside the house or bring them into the house while maintaining a distance of at least 6 feet. The use of online suppliers who deliver groceries to homes is encouraged.

After shopping, precautions should be taken when unpacking groceries. It is advisable to wait for at least 24 hours before unpacking as most virus on the surface of common materials becomes inactive (noninfectious) after the first 24 hours. This would be a precautionary principle as there is limited evidence that virus particles on those products transmit disease. If one is using a disposable grocery bag, they should discard it once at home. Reusable bags can be stored for later use. After unpacking groceries, wash hands with soap and water for at least 20 seconds, or use hand sanitizer that contains at least 60% alcohol. Good hand hygiene should also be before practiced before eating. Plates or silverware should not be shared. Fruits and vegetables should be rinsed thoroughly with water before consumption (Desai & Aronoff, Food Safety and COVID-19, 2020).

Andrews, Foulkes, & Blakemore (2020) have underscored the role adoloscents can play in mitigating the risks of contacting COVID-19. They show that wheras adoloscents are seem to be a low risk group, they are potential carriers of the virus. Much of the time, they could be willingness to follow social distancing guidelines yet it essential to reduce the risk for other people. The scholars propose that the susceptibility of adolescent to peer influence can bebeneficial and should be harnessed by public-health campaigns to increase social distancing.

2.4.3 Secondary Prevention

For diseases like COVID-19 in which the natural history includes an early period when it is easily identified and treated so that progression to a severe stage can be stopped, secondary prevention approaches can be applied. The approaches aim to reduce the more serious consequences of disease through early diagnosis and treatment (Bonita, Beaglehole, & Kjellström, 2006). Early recognition and isolation of patients with possible infection of COVID-19 is recommended (Heinzerling, et al., 2020). This would require improving surveillance mechanism and reporting of suspected cases, followed by validation and confirmation (CDC COVID-19 Response Team, 2020).

Active and appropriate responses ranging from local containment measures to investigation and containment by a highly specialized team should be put in place. Surveillance requires continuing scrutiny of all aspects of the occurrence and spread of disease, generally using methods distinguished by their practicability, uniformity and, frequently, their rapidity, rather than by complete accuracy (CDC COVID-19 Response Team, 2020). Monitoring jurisdiction-level numbers of COVID-19 cases, deaths, and changes in incidence is critical for understanding community risk and making decisions about community mitigation, including social distancing, and strategic health care resource allocation (CDC COVID-19 Response Team,2020)

The Centre for Disease Control and Prevention has provided an Interim Clinical Guidance for Management of Patients with COVID-19 (CDC, 2020). According to this guideline, patients with a mild clinical presentation (absence of viral pneumonia and hypoxia) may not initially require hospitalization, and many patients will be able to manage their illness at home. Some patients with COVID-19 will have severe disease which requires hospitalization for management. Inpatient management revolves around the supportive management of the most common complications of severe COVID-19: pneumonia, hypoxemic respiratory failure/ARDS, sepsis and septic shock, cardiomyopathy and arrhythmia, acute kidney injury, and complications from prolonged hospitalization, including secondary bacterial infections, thromboembolism, gastrointestinal bleeding, and critical illness polyneuropathy/myopathy

Sommers & Coburn (2020) present the essence of a paid sick leave as an essential part of the public health and humanitarian response in managing COVID-19 at workplaces, particularly

for lower-income populations and communities of color that have been hit hard by the pandemic. When mildly symptomatic people stay home, the spread of COVID-19 could be controlled. Researchers in Israel found that 94% of people would comply with advice to self-quarantine when their earnings are guaranteed vs just 57% when this would mean the loss of wages. Manyof these patients may not self-quarantine especially when their livelihood and their family's well-being are immediately at stake. They should not be forced to choose between their livelihoods and the health of the larger community.

2.4.4 Tertiary Prevention

There are therapeutic options for COVID-19 currently under investigation (CDC, 2020). No U.S. Food and Drug Administration (FDA)-approved drugs have demonstrated safety and efficacy in randomized controlled trials when used to treat patients with COVID-19. Howeverthe FDA has granted an Emergency Use Authorization for the use of Remdesivir to treat severe cases (CDC, 2020). Use of investigational therapies for treatment of COVID-19 should ideally be done in the context of enrollment in randomized controlled trials, so that beneficial drugs can be identified.

Other drugs under investigation include lopinavir-ritonavir and hydroxychloroquine with and without azithromycin. According to Mehra, Desai, Ruschitzka, and Patel (2020), the benefit of hydroxychloroquine or chloroquine was not confirmed when used alone or with a macrolide, on in-hospital outcomes for COVID-19. On the contrary, hydroxychloroquine or chloroquine drug regimens were associated with decreased in-hospital survival and an increased frequency of ventricular arrhythmias when used for treatment of COVID-19.

The COVID-19 pandemic has the potential to cause disruptions in treatment for people living with other health conditions. For example in sub-Saharan Africa where more than two-thirds of the nearly 40 million people living with HIV worldwide reside, the COVID-19 pandemic has the potential to cause disruptions in treatment for people living with HIV/AIDS that could result in hundreds of thousands of extra deaths from AIDS-related illnesses (Stephenson, 2020). A projected 6-month disruption of antiretroviral therapy (ART) could leadto more than a half-million extra deaths from tuberculosis and other AIDS-related illnesses in 2020 to 2021, according to modeling experts convened by UNAIDS to assess the potential effects of COVID-related disruptions on HIV/AIDS. The Joint United Nations Programme on

HIV/AIDS (UNAIDS) and the World Health Organization (WHO) have cautioned that the COVID-19 pandemic must not be an excuse to divert investment from HIV/AID (UNAIDS & WHO, 2020).

2.5 Summary of Identified Gaps

At times of pandemics like the COVID-19, understanding the risk perception of the population, preventive behaviours and finding out the sources of information the public trusts is vital to enable effective communication and respond efficiently (Reintjes R, Das E, Klemm C, Richardus JH, Keßler V, 2016). However, at construction sites such as the Tororo Cement Round-About Construction Project, little is known about the complex interplay of changing epidemiology, public trust to pandemic communication source, risk perception and public preventive behaviour.

The study shall deliver evidence-based information to encourage rational protective behavior at work places. Moreover, it shall help to understand the dynamics of risk perceptions, intention to implement recommended behaviours, misinformation and protective behaviours, at construction sites which information is lacking.

CHAPTER THREE: METHODOLOGY

This chapter presents the methodology and methods that shall be used to carry out the study. It describes the research design, study population, study area, an overview of the research approach, data collection methods, data analysis ethical considerations.

3.1 Research design

This is an observational study. It shall adopt the cross-sectional design and measure the variables at a single point in time. The cross-sectional design will not allow the assessment of actual causal relations. It will only be a snapshot a current state of the perceptions of the participants and behaviors.

3.2 Locale of Study

The study will collect data from the Tororo Cement Round-About Construction Site. The site is located approximately 204 kilometers by road, east of Kampala, the capital and largest city of Uganda. This is approximately 13 kilometers, by road, west of the border town of Malaba and the international border between Uganda and Kenya (Globefeed.com, 2018).

3.3 Population of the study

The population of the study shall be the construction workers at project site. These shall include engineers, surveyors, foremen, masons, machine operators and casual laborers. Currently there are 57 workers (N=57) workers at construction site.

3.4 Sample Size Determination

The following mathematical formula by Taro Yamane (1970) shall be used to determine the sample size.

$$n = \frac{N}{[1 + N(e)^2]}$$

Where;

N = Total number of households [53]

n= Total sample size

E= desired margin error [0.05]

$$\boldsymbol{n = \frac{53}{[1+53(0.05)^2]}}$$

n= 47 Individuals

A correction factor of 10% shall be added to this number of individuals to cater for non-response.

3.4 Sampling Technique

Simple random sampling technique shall be used to determine the construction workers who will participate in the study. Purposive sampling shall also be used to single out the site leaders, managers and engineers.

3.5 Research instruments

The study shall use a standard protocol for Behavioral Insights on COVID-19 (WHO, 2020). The protocol was developed by the world Health Organization to guide the collection of information necessary to shape effective and appropriate COVID-19 pandemic response measures amidst the rapidly changing epidemiological situations. The questionnaire shall be adapted to the local context and current situation.

The questionnaire shall be translated by an expert translator familiar with terminology of COVID-19 and behavioral sciences and with interview skill. It shall then be reviewed by two peer reviewers and revised accordingly. The translated questionnaire shall be pre-tested with a sample of respondents with a focus on their easy understanding of the questions before use.

3.6 Scientific review and validation of the Research instrument

The protocol and questionnaire have been reviewed and validated based on an ad hoc approach due to the urgency of the need for data (WHO, 2020). The tool was originally prepared by Professor Betsch at the University of Erfurt, Germany, and subsequently reviewed by the COSMO group. This group represents leading global experts in behavioural insights research for health and in developing and validating survey tools similar to the current. In addition, following two rounds of data collection in Germany, two scientists (Prof. Robert Böhm, University of Copenhagen, Denmark, and Britta Renner, University of Konstanz, Germany) reviewed the data and how it was presented (ibid).

Users of the questionnaire are recommended to ensure local validation, e.g. in the form of cognitive testing of the questionnaire and of the translation of the items.

3.6 Reliability and validity testing of Research instrument

3.6.1 Validity of the Instrument

The local validity of the instruments will be established using the content validity index (CVI) using the formula.

$$CVI = \frac{\text{Total number of items rated relevant}}{\text{The total number of items in the questionnaire}}$$

If CVI is found to be equal or greater than 0.60, then the questionnaire will be considered valid.

After establishing the validity of the instruments, a pilot study will be done at another construction site to the pretest the instrument. The response of the respondents in the pretest be calculated to reveal a positive value.

3.6.2 Reliability of the Instrument

To establish the consistency of responses of respondents the reliability test will be carried out. It shall involve pre-testing the questionnaire at a construction site with similar

characteristics. Cronbach's Alpha coefficient test will be performed on the results, and if found equal to or greater than 0.7, the instrument will be considered reliable.

3.7 Collection of data

The research used research assistants to assist in data collecting. These research assistants shall be selected with care to ensure that they are educated, knowledgeable concerning the topic and local conditions; objective and not biased not biased concerning the topic. The research assistants shall also be trained regarding the practice and techniques. Data collectors shall follow the national guidelines on preventing the spread of COVID-19.

The questionnaires administered in the form of a structured interview to ensure that the fielding period is as short as possible as the situation evolves quickly, as do the peoples' perceptions. Where convenient some Data shall be collected online or via phone. Care shall be taken to ensure data collected is of good quality that is reliable and valid.

3.8 Data analysis

The collected data was coded and analyzed using data analysis software Stata 23. The data analysis involved descriptive data presentation, regression analyses and correlation analyses. Only completed data sets were considered in the analysis. Missing values were treated as missingvalues and not be imputed.

3.9 Limitations of the Study

Since the findings related to the study population may not apply to specific population groups in other settings, this affects the generalizability of the study findings. To overcome this limitation, the researcher recomends that similar surveys are conducted at other construction sites and workplaces with the broader population or specific population groups before rolling them out in a tailored fashion.

3.10 Ethical considerations

Before collecting data, permission was obtained from the relevant authorities, individuals and the community where data shall be collected. Research participants provided informed consent before starting the questionnaire. The study involved only non-identifiable data about human beings.

Ethical clearance to conduct the study was obtained from the Research Ethics Committee at the university.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.0 Introduction

This chapter presents findings of the study which was done to assess the knowledge, risk perception, public trust and preventive practices among construction workers towards covid-19 at Tororo Cement Round-About Construction Project. The findings are presented in sections and subsections.

4.1 Social Demographic Characteristics of Respondents

This section presents and discusses the background information of respondents that were used in the study. Among these characteristics include; age, gender, level of education, and health history among others.

4.1.1 Age of Respondents

Table 1: Age of respondents

How old are you?		**Frequency**	**Percent/%**
Valid	15-20	1	2.1
	21-25	7	14.9
	26-30	14	29.8
	31-35	14	29.8
	36+	11	23.4
	Total	**47**	**100.0**

Source: Field Data (Jan, 2021)

Findings show that 2.1% of respondents were within age group of 15-20 while 14.9% were within 21-25 age group. In addition, the age groups of 26-30 and 31-35 each attracted 29.8% whereas respondents aged 36 and above contributed 23.4%.

4.1.2 Gender of Respondents

Table 2: Respondents' gender

What is your gender?		Frequency	Percent%
Valid	Male	39	83.0
	Female	8	17.0
	Total	**47**	**100.0**

Source: Field Data (Jan, 2021)

This study attracted 83.0% male participants and 17.0% female participants. The female respondents were more in number than the female gender due to the physical nature of construction works. The construction works attract more men than women.

4.1.3 Education Level of Respondents

Table 3: Respondents' education level

level of school education		Frequency	Percent/%
Valid	Primary School	2	4.3
	O-level (S1 –S4)	26	55.3
	A- level l (S4 – S6)	14	29.8
	Tertiary Institution/ University	5	10.6
	Total	**47**	**100.0**

Source: Field Data (Jan, 2021)

Findings show that majority (55.3%) of respondents had O'level of education while 29.3% had A'level. In addition, 10.6% of respondents were in tertiary institutions while 4.3% had primary education.

4.1.4 History of Chronic Illness

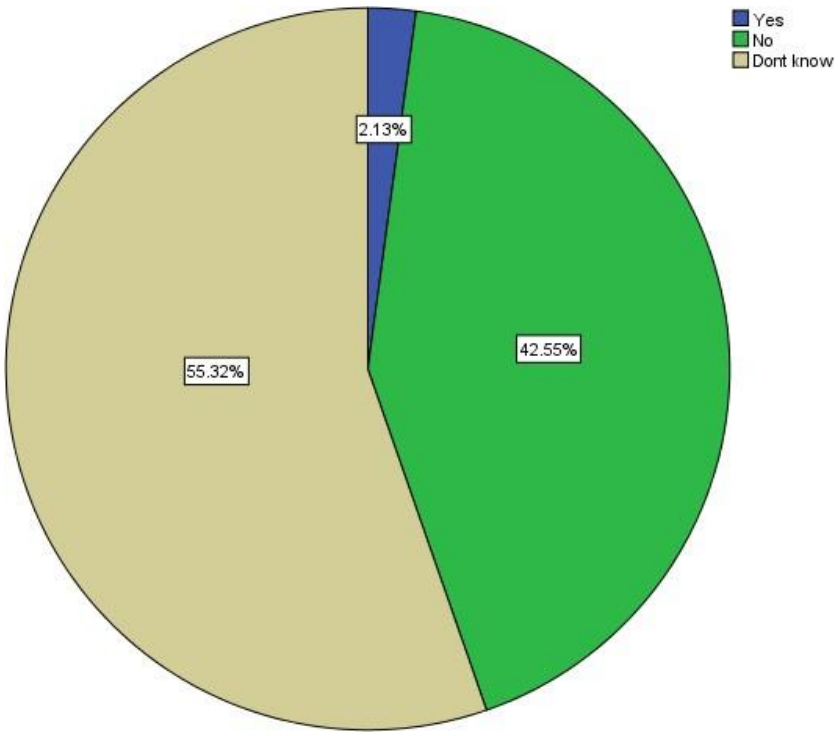


Figure 1: Respondents' history of chronic illness

A question of whether construction workers had a history of chronic illnesses was put to the attention of study participants and 55.3% of respondents indicated that they did not know if they actually had any chronic illness. In addition, 42.5% revealed that they had no history of chronic illness while 2.1% showed that they had a history of a chronic illness.

4.2 Knowledge Among Construction Workers Regarding Management of COVID-19 Pandemic at Tororo-Cement Round-About Construction Project

4.2.1 Construction Workers' Awareness of Covid-19 (Corona virus)

Table 4: Whether respondents are aware of the novel coronavirus outbreak

Are you aware of the novel coronavirus outbreak?		**Frequency**	**Percent/%**
Valid	Yes	41	87.2
	No	1	2.1
	Don't know	5	10.6
	Total	**47**	**100.0**

Source: Field Data (Jan, 2021)

Respondents were asked if they were aware of the novel coronavirus outbreak and 87.2% responded in affirmative (yes) whereas 2.1% responded in negative (no). However, 10.6% did not know what to answer.

Table 5: Whether respondents been infected with the novel coronavirus

Are you or have you been infected with the novel coronavirus?		Frequency	Percent/%
Valid	Yes	0	0.0
	No	15	31.9
	Don't Know	32	68.1
	Total	**47**	**100.0**

Source: Field Data (Jan, 2021)

A question was brought to the attention of construction workers at Tororo Round about project whether they had been infected by coronavirus and no respondent answered in affirmative (yes).

However, 31.9% of respondents said no while the majority (68.1%) of respondents revealed that they did not know whether they were infected with coronavirus (covid-19).

Table 6: Whether respondents know people infected with Coronavirus

Know people in or around who are or have been infected with the novel coronavirus?		**Frequency**	**Percent/%**
Valid	Yes	3	6.4
	No	27	57.4
	Don't Know	17	36.2
	Total	**47**	**100.0**

Source: Field Data (Jan, 2021)

Asked if they knew people in or around the project who had been infected with covid-19, 6.4% said yes while 57.4% said no. However, 36.2% revealed that they did not know to comment.

Table 7: People at risk of severe covid-19 illness

People at risk of severe covid-19 illness	**Are at Risk**		**Are not at Risk**		**Don't know**	
	Freq	**Percent %**	**Freq**	**Percent %**	**Freq**	**Percent %**
People aged 60 years or older	30	63.8	5	10.6	12	25.6
Pregnant women	8	17.0	4	8.5	35	74.5
Infants	14	29.8	8	17.0	25	53.2
Small children aged 1-5 years	5	10.6	15	31.9	27	57.4
People who have serious chronic heart disease	45	95.7	0	0		4.3
People who have serious chronic diabetes	40	85.1	0	0	7	14.9
People who have serious lung disease	38	80.9	0	0	9	19.1
People who have asthma	42	89.4	0	0	5	10.6

Source: Field Data (Jan, 2021)

Study participants were asked to evaluate different groups which are at risk of severe illness related to the novel coronavirus and findings are shown in table 7. According to findings, the group "People aged 60 years or older" attracted 63.8% of respondents who revealed that this

group is at risk of severe coronavirus infection while 10.6% said the group is not at risk. However, 25.6% of respondents showed that they don't know whether "People aged 60 years or older" are severely affected by covid-19 or not.

On the group, "Pregnant women", 17.0% of respondents said that these are at risk of severe illness related to the novel coronavirus while 8.5% said no. However, majority of the respondents showed that they didn't know whether pregnant women are at risk or not at risk of severe illness related to the novel coronavirus.

On Infants, 29.8% of respondents believe that this group is at risk of severe illness related to the novel coronavirus. In addition, 17.0% said this group is not at risk while 53.2% revealed that they don't know whether infants are at risk or not at risk of severe illness related to the novel coronavirus.

On the group "small children aged 1-5 years", 10.6% of respondents said this group is at risk while 31.9% said it is not at risk. However, the majority (57.4%) said that they don't know whether small children aged 1-5 are at risk or not at risk of severe illness related to the novel coronavirus.

On the "People who have serious chronic heart disease", majority (95.7%) of respondents said that this group is at risk of severe illness related to the novel coronavirus. In addition, 4.3% didn't know whether people who have serious chronic heart disease are at risk or not at risk of severe illness related to the novel coronavirus.

On the group "People who have serious chronic diabetes", 85.1% of respondents indicated that the group is at risk of severe illness related to the novel coronavirus. In addition, 14.9% of respondents didn't know if this group is at risk or not at risk of severe illness related to the novel coronavirus.

On the "People who have serious lung disease", majority (80.9%) of respondents said that this group is at risk of severe illness related to coronavirus. However, 19.1% indicated that they did not know whether the group is at risk or not at risk of severe illness related to the novel coronavirus.

On the "People who have asthma", 89.4% said this group is at risk of severe illness related to the novel coronavirus. However, 10.6% did not know what to answer.

4.2.2 Construction Workers' Knowledge on Symptoms and Transmission of Covid-19

Table 8: What is correct about transmission of novel coronavirus

Which of the following is correct about transmission of novel coronavirus?		Frequency	Percent/%
Valid	The novel coronavirus is transmissible from person to person	30	63.8
	The novel coronavirus is transmitted by animals to humans only	2	4.3
	The novel coronavirus is not transmissible	1	2.1
	Don't know	14	29.8
	Total	**47**	**100.0**

Source: Field Data (Jan, 2021)

Findings show that majority (63.8%) of respondents acknowledged that "the novel coronavirus is transmissible from person to person". In addition, 4.3% said that the novel coronavirus is transmitted by animals to humans only while 2.1% believe that the novel coronavirus is not transmissible. However, 29.8% of respondents indicated that they don't know about the transmission of covid-19. This result is similarly presented in the figure 2.

Table 9: Respondents' knowledge about the transmission of the novel coronavirus

Which of the following is correct about transmission of novel coronavirus?		**Freq**	**Percent/%**
Valid	The novel coronavirus is transmissible via droplets through coughing, sneezing or intimate contact	25	53.2
	The novel coronavirus is transmissible through contact with contaminated surfaces	10	21.3
	The novel coronavirus is transmissible via the fecal-oral route.	5	10.6
	The novel coronavirus is transmissible via breast feeding	6	12.8
	The novel coronavirus is transmissible via witch craft	0	0.0
	The novel coronavirus is transmissible via sharing clothes	1	2.1
	The novel coronavirus is transmissible via using boda boda	0	0.0
	Total	**47**	**100.0**

Source: Field Data (Jan, 2021)

Findings also show that majority (53.2%) of respondents revealed that the novel coronavirus is transmissible via droplets through coughing, sneezing or intimate contact. In addition, 21.3% indicated that the novel coronavirus is transmissible through contact with contaminated surfaces while 10.6% showed that the novel coronavirus is transmissible via the fecal-oral route. Whereas 12.8% of respondents said that the novel coronavirus is transmissible via breast feeding, 2.1% urged that the novel coronavirus is transmissible via sharing clothes. No respondents indicated that the novel coronavirus is transmissible via witch craft or using boda boda.

Table 10: Some of the symptoms of the novel coronavirus

Symptoms of the novel coronavirus?	Related to Coronavirus		Not related to coronavirus		Don't know	
	Freq	Percent%	Freq	Percent%	Freq	Percent %
Fever	20	42.6	8	17.0	19	40.4
Cough	35	74.5	4	8.5	8	17.0
Shortness of breath	14	29.8	8	17.0	25	53.2
Sore throat	5	10.6	27	57.4	15	31.9
Runny or stuffy nose	4	8.5	40	85.1	2	4.3
Muscle or body aches	3	6.4	4	8.5	40	85.1
Headaches	8	17.0	11	23.4	28	59.6
Fatigue (tiredness)	12	25.5	15	31.9	20	42.6
Diarrhea	1	2.1	19	40.4	27	57.4

Source: Field Data (Jan, 2021)

Findings show that 42.6% of study participants who responded to “fever” as a symptom of covid-19 revealed that the symptom is related to coronavirus. In addition, 17.0% said that feveris not related to coronavirus while 40.4% indicated that they don’t know whether fever is or not related to coronavirus.

On cough as a symptom, 74.5% of respondents said it is related to coronavirus while 8.5% showed that cough is not related to coronavirus. However, 17.0% indicated that they don’t know whether cough is related or not related to coronavirus.

Regarding “shortness of breath”, 29.8% of respondents said it is related to coronavirus while 17.0% said it is not. However, majority (53.2%) of respondents revealed that they don’t know whether shortness of breath is related or not related to coronavirus.

On sore throat, majority (57.4%) of respondents indicated that the symptom is not related to coronavirus while 31.9% showed that they don’t know whether sore throat is related or not related to coronavirus. However, 10.6% of the respondents who responded on sore throat revealed that the symptom is related to coronavirus.

On runny or stuffy nose, majority (85.1%) of respondents showed that this symptom is not related to coronavirus while 8.5% said it is related. However, 4.3% said they don’t know whetherrunny or stuffy nose is related or not related to coronavirus.

On muscle or body aches, majority (85.1%) of respondents stressed that they don't know if the symptom is related to coronavirus or not, whereas 8.5% indicated that the symptom is not related to coronavirus. Only 6.4% showed that "muscle or body aches" is related to coronavirus.

Findings also indicate that 17.0% of respondents on "headaches" as a symptom said that it is related to coronavirus whereas 23.4% said it is not related. However, majority (59.6%) revealed that they don't know whether headache is related or not related to coronavirus.

On fatigue (tiredness), 25.5% said it is related to coronavirus while 31.9% of respondents indicated that it is not related. However, 42.6% revealed that they don't know if fatigue is related or not related to coronavirus.

On diarrhoea, majority (57.4%) of respondents showed that they don't know whether is related or not related to coronavirus while 40.4% said it is actually not related. Only 2.1% indicated that diarrhea is related to coronavirus.

4.3 Perceptions of construction workers on management of COVID-19 at Tororo-Cement Round-About Construction Project

The construction environment is one of the hotspot areas for covid-19 to spread due to high number of workers. This study sought to analyze the perceptions of construction workers in regard to the management of COVID-19 at Tororo-Cement Round-About Construction Project. Respondents that participated in the study gave their responses on a number of questions askedby the researcher.

Table 11: Construction Worker's probability of getting infected with the novel coronavirus

What is your probability of getting infected with the novel coronavirus?		**Frequency**	**Percent/%**
Valid	Unlikely	7	14.9
	Moderate	9	19.1
	Likely	28	59.6
	Extremely likely	3	6.4
	Total	**47**	**100.0**

Source: Field Data (Jan, 2021)

Findings show that 14.95% of respondents showed that there is unlikelihood of construction workers contracting coronavirus. In addition, 19.1% indicated that there is moderate probability for construction workers to get infected with the novel coronavirus. However, majority (59.6%) of respondents revealed that there is a likely probability of construction workers getting the novel coronavirus. Only 6.4% stressed that the probability of construction workers getting coronavirus is extremely likely.

Table 12:How severe contracting the novel coronavirus would be for construction workers

How severe would contracting the novel coronavirus be for you?		**Frequency**	**Percent/%**
Valid	Not at all	2	4.3
	Mild	3	6.4
	Moderate	9	19.1
	severe	27	57.4
	Very severe	6	12.8
	Total	**47**	**100.0**

Source: Field Data (Jan, 2021)

A question of how severe contracting the novel coronavirus would be for construction workers was put to the attention of study participants and majority (57.4%) of respondents said contracting covid-19 would actually be severe while 12.8% said very severe. In addition, 19.1% indicated moderate while 6.4% showed mild. Only 4.3% of respondents stressed that contracting the novel coronavirus would not be severe at all.

Table 13: How susceptible construction workers consider themselves to an infection with the novel coronavirus

How susceptible do you consider yourself to an infection with the novel coronavirus?		**Frequency**	**Percent/ %**
Valid	Low susceptibility	7	14.9
	Somewhat Susceptible	22	46.8
	Very susceptible	17	36.2
	Extremely susceptible	1	2.1
	Total	**47**	**100.0**

Source: Field Data (Jan, 2021)

Further, a question of how susceptible construction workers consider themselves to an infection with the novel coronavirus was put to their attention and findings show that 14.9% of respondents indicated low susceptibility while 46.8% indicated that construction workers are somewhat susceptible to an infection with the novel coronavirus. Also, 36.2% of respondents indicated very susceptible whereas 2.1% stressed that construction workers are extremely susceptible to an infection with the novel coronavirus.

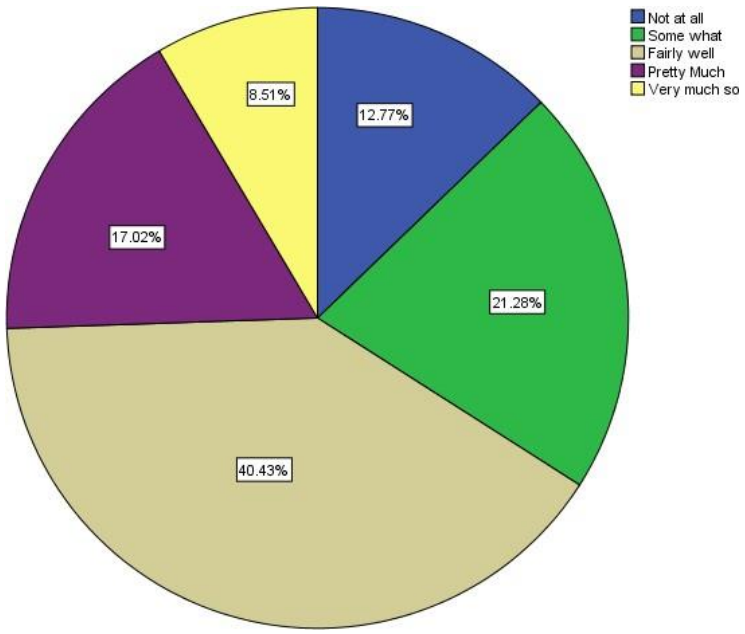


Figure 2: I know how to protect myself from coronavirus

Findings further show that 40.4% of respondents indicated that know 'fairly well" how to protect themselves from coronavirus while 21.2% revealed that they "somewhat" know how to protect themselves from coronavirus. Whereas 17.0% of respondents indicated "pretty much", 8.5% showed "very much so'. However, 12.7% of respondents stressed that don't know how to protect themselves from coronavirus. (Figure 3).

Table 14: Avoiding the novel coronavirus in the current situation

Avoiding an infection with the novel coronavirus in the current situation is…		**Frequency**	**Percent/%**
Valid	Extremely difficult	3	6.4
	Difficult	31	66.0
	Moderate	8	17.0
	Easy	5	10.6
	Total	**47**	**100.0**

Source: Field Data (Jan, 2021)

Findings show that majority of respondents (66.0%) indicated that avoiding an infection with the novel coronavirus in the current situation is difficult while 6.4% showed that it is extremely difficult. In addition, 17.0% indicated that is moderate whereas 10.6% of respondents stressed that it is easy to avoid an infection with the novel coronavirus in the current situation.

Table 15: Follow the recommendations from authorities to prevent spread of novel coronavirus

I follow the recommendations from authorities in my country to prevent spread of novel coronavirus.		**Frequency**	**Percent/ %**
Valid	Not at all	21	44.7
	Some what	15	31.9
	Fairly well	10	21.3
	Pretty Much	1	2.1
	Total	**47**	**100.0**

Source: Field Data (Jan, 2021)

Findings show that 44.7% of respondents indicated that they follow the recommendations from authorities to prevent spread of novel coronavirus while 31.9% indicated "somewhat". In addition, 21.3% of respondents follow the recommendations from authorities to prevent spread of novel coronavirus fairly well whereas 2.1% do it pretty much.

Further, respondents were asked to evaluate possible preventive measures and their responses are presented in table 15.

Table 16: Evaluating measures to prevent the spread and infection of the novel coronavirus

Effective measures to prevent the spread and infection of the novel coronavirus	**Yes**		**No**		**Don't know**	
	Freq	**Percent %**	**Freq**	**Percent %**	**Freq**	**Percent %**
Hand washing for 20 seconds	15	31.9	12	25.5	20	42.6
Avoiding touching your eyes, nose, and mouth with unwashed hands	30	63.8	7	14.9	10	21.3
Use of disinfectants to clean hands when soap and water is not available for washing hands	18	38.3	13	27.7	16	34.0
Staying home when you are sick or when you have a cold	12	25.5	27	57.4	8	17.0
Not travelling abroad	36	76.6	5	10.6	6	12.8
Herbal supplements	39	83.0	4	8.5	4	8.5
Taking food supplements	18	38.3	20	42.6	9	19.1
Covering your mouth when you cough	28	59.6	5	10.6	14	29.8
Ensuring a balanced diet	20	42.6	12	25.5	15	31.9
Avoiding close contact with someone who is infected	40	85.1	4	8.5	3	6.4
Avoiding eating meat	0	0.0	41	87.2	6	12.8
Exercising regularly	6	12.8	25	53.2	16	34.0
Wearing a face mask	28	59.6	12	25.5	7	14.9
Avoiding places where many people gather	25	53.2	16	34.0	6	12.8
Using antibiotics	11	23.4	21	44.7	15	31.9
Drinking ginger tea	35	74.5	5	10.6	7	14.9
Social distancing	30	63.8	2	4.3	15	31.9
Self-quarantine	34	72.3	7	14.9	6	12.8

Source: Field Data (Jan, 2021)

According to table 15, of the respondents who responded on whether hand washing for 20 seconds is an effective measure to prevent the spread and infection of the novel coronavirus, 31.9% said yes, 25.5% said no while 42.6% showed that they don't know if hand washing for 20

seconds is or is not an effective measure to prevent the spread and infection of the novel coronavirus.

On avoiding touching one's eyes, nose, and mouth with unwashed hands, majority (63.8%) of respondents indicated "yes", while 14.9% indicated "no". However, 21.3% showed that they "don't know" whether avoiding touching eyes, nose, and mouth with unwashed hands is an effective measure to prevent the spread and infection of the novel coronavirus.

On use of disinfectants to clean hands when soap and water is not available for washing hands, 38.3% of respondents indicated "yes" while 27.7% showed "no". However, 34.0% of respondents revealed that they "don't know" if use of disinfectants to clean hands when soap and water is not available for washing hands is an effective measure to prevent the spread and infection of the novel coronavirus.

Concerning staying home when you are sick or when you have a cold, 25.5% indicated that it is an effective measure to prevent the spread and infection of the novel coronavirus while 57.4% showed that itis not. However, 17.0% of respondents indicated that they "don't know" whether staying home when you are sick or when you have a cold is actually an effective measure to prevent the spread and infection ofthe novel coronavirus.

Findings indicate that "not travelling abroad" was given a "yes" by 76.6% of respondents who believe that it is an effective measure to prevent the spread and infection of the novel coronavirus. In addition, 10.6% of respondents said "no" while 12.8% of respondents indicated that they "don't know" whether "not travelling abroad" is or is not an effective measure to prevent the spread and infection of the novel coronavirus.

Further, 83.0% of respondents who commented on herbal supplements indicated that these supplements actually are an effective measure to prevent the spread and infection of the novel coronavirus. In addition, 8.5% indicated "no" whereas another 8.5% showed that they "don't know" whether herbal supplements are an effective measure to prevent the spread and infection of the novel coronavirus.

While majority (59.6%) of respondents indicated yes to whether covering your mouth when you cough is an effective measure to prevent the spread and infection of the novel coronavirus, 10.6% indicated "no" while 29.8% showed that they "don't know" if covering your mouth when you cough is an effective measure to prevent the spread and infection of the novel coronavirus.

Findings also show that avoiding close contact with someone who is infected is an effective measure to prevent the spread and infection of the novel coronavirus (Yes=85.1%). However, 8.5% of respondents indicated no while 6.4% don't know.

On wearing a face mask, 59.6% of respondents indicated "yes" while 25.5% showed "no". However, 14.9% revealed that they don't know whether wearing a face mask is an effective measure to prevent the spread and infection of the novel coronavirus.

Also, avoiding places where many people gather was emphasised by 53.2% of respondents as an effective measure to prevent the spread and infection of the novel coronavirus unlike 34.0% who said "no". However, 12.8% of respondents indicated that they don't know whether avoiding places where many people gather is actually an effective measure to prevent the spread and infection of the novel coronavirus.

On using antibiotics, 23.4% of respondents indicated yes while 44.7% indicated no. But 31.9% indicated that they don't know whether using antibiotics is or isn't an effective measure to prevent the spread and infection of the novel coronavirus.

On drinking ginger tea, majority (74.5%) of respondents said yes while 10.6% said no. However, 14.9% of respondents indicated that they don't know whether drinking water is or isn't an effective measure to prevent the spread and infection of the novel coronavirus.

Findings show that 63.8% of respondents revealed that social distancing is an effective measure to prevent the spread and infection of the novel coronavirus. Additionally, 4.3% of respondents who reacted to "social distancing" didn't know whether it is or isn't an effective measure to prevent the spread and infection of the novel coronavirus.

On self-quarantine, majority of respondents (72.3%) indicated that is (yes) an effective measure to prevent the spread and infection of the novel coronavirus while 14.9% showed that it is not. However, 12.8% indicated that they don't know whether self-quarantine is or isn't an effective measure to prevent the spread and infection of the novel coronavirus.

Table 17: Washing hands often with water and soap for 20 seconds each time

Washing my hands often with water and soap for 20 seconds each time is		**Frequency**	**Percent/%**
Valid	Very inconvenient	2	4.3
	Inconvenient	36	76.6
	I don't mind it	8	17.0
	Easy	1	2.1
	Total	**47**	**100.0**

Source: Field Data (Jan, 2021)

Findings show that majority (76.6%) of respondents revealed that washing hands often with water and soap for 20 seconds each time is inconveniencing. In addition, 4.3% showed that it very inconveniencing while 17.0% emphasised that they don't mind it. Only 2.1% stressed that washing my hands often with water and soap for 20 seconds each time is easy.

Table 18: Whether family and friends are washing their hands frequently

I see my family and friends washing their hands frequently		**Frequency**	**Percent/ %**
Valid	Strongly Disagree	5	10.6
	Disagree	26	55.3
	No opinion	6	12.8
	Agree	10	21.3
	Total	**47**	**100.0**

Source: Field Data (Jan, 2021)

Findings further indicate that majority (55.3%) of respondents disagree with the statement that family and friends washing their hands frequently whereas 10.6% strongly disagreed. In addition, 12.8% showed no opinion while 21.3% agreed with the statement.

Table 19: Whether family and friends avoid crowded areas

My family and friends avoid crowded areas		**Frequency**	**Percent/%**
Valid	Strongly Disagree	4	8.5
	Disagree	34	72.3
	No opinion	6	12.8
	Agree	3	6.4
	Total	**47**	**100.0**

Source: Field Data (Jan, 2021)

While majority (72.3%) of respondents disagreed with the statement that a construction worker's family and friends avoid crowded areas, 12.8% had no opinion on the matter. Only 6.4% of respondents agreed with the statement.

Table 20: If employer urges worker to avoid crowded areas at the site

My employer urges me to avoid crowded areas at work		**Frequency**	**Percent/ %**
Valid	Disagree	3	6.4
	No opinion	32	68.1
	Agree	12	25.5
	Total	**47**	**100.0**

Source: Field Data (Jan, 2021)

Findings show that majority (68.1%) of respondents reserved their opinion on the statement that "my employer urges me to avoid crowded areas at work" while 25.5% agreed with the statement. Only 6.5% disagreed with the statement.

Table 21: Health authorities urge me to wash my hands frequently

Health authorities urge me to wash my hands frequently		**Frequency**	**Percent/ %**
Valid	Disagree	13	27.7
	No opinion	11	23.4
	Agree	19	40.4
	Strongly Agree	4	8.5
	Total	**47**	**100.0**

Source: Field Data (Jan, 2021)

Whereas 27.7% of respondents disagreed with the statement that health authorities urge construction workers to wash hands frequently, 23.4% reserved their opinion while 40.4%agreed with it. Only 8.5% strongly agreed with the statement.

Table 22:I seldom have access to water and soap

I seldom have access to water and soap		**Frequency**	**Percent/%**
Valid	Strongly Disagree	4	8.5
	Disagree	27	57.4
	No opinion	7	14.9
	Agree	7	14.9
	Strongly Agree	2	4.3
	Total	**47**	**100.0**

Source: Field Data (Jan, 2021)

Findings show that majority of respondents (57.4%) disagreed with the statement that "I seldom have access to water and soap" while 8.5% strongly disagreed. This means that many construction workers have access to water and soap at the construction site. However, 14.9% of respondents reserved their opinion on the statement while 14.9% and 4.3% respectively agreed and strongly agreed with the statement.

Table 23: How washing hands helps protect others

It helps to protect others to wash my hands frequently		**Frequency**	**Percent/%**
Valid	Strongly Disagree	2	4.3
	Disagree	5	10.6
	No opinion	13	27.7
	Agree	21	44.7
	Strongly Agree	6	12.8
	Total	**47**	**100.0**

Source: Field Data (Jan, 2021)

Findings show that 4.3% of respondents indicated that construction workers strongly disagree with the statement that "it helps to protect others to wash my hands frequently". In addition, 10.6% disagreed with the same statement whereas 27.7% did not give their opinion. However, 44.7% and 12.8% of respondents respectively agreed and strongly agreed with the statement.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a summary of the findings from the study, draws conclusions and gives recommendations made for future studies on assessing the knowledge, risk perception, public trust and preventive practices among construction workers towards covid-19 at Tororo Cement Round-About Construction Project.

5.2 Summary

Findings of the study indicate that many respondents do not know their health history to ascertain whether they have suffered a chronic illness before. Although 42.5% showed that they have no history of a chronic illness, the revelation by 12.1% of respondents that they have a history of a chronic illness which puts their health at risk in case they contract covid-19 infection.

According to research findings, majority of respondents indicated that they were aware ofpresence of coronavirus infection in Uganda and Tororo district in particular. However, a considerable percentage of respondents (10.6%) declined to comment on the matter.

Results also showed that majority (68.1%) of respondents revealed that they did not know whether they were infected with coronavirus (covid-19) or not. This result implies that many construction workers have not been tested to ascertain whether they have covid-19 or not.

Further, majority of respondents urged that they don't know people in or around the construction site who are or have been infected with the novel coronavirus. With 36.2% of respondents withholding their opinion on this matter, the study result implies that construction workers are at a very high risk of contracting and spreading coronavirus.

Findings indicate that respondents highlighted different groups of people amongst themselves who are at a very high risk of severe covid-19 infection. These groups include people aged 60 years or older, people who have serious chronic heart disease, people who have serious chronic diabetes, people who have serious lung disease and people who have asthma among others.

Study results also show that majority of respondents acknowledged that the novel coronavirus is transmissible via droplets through coughing, sneezing or intimate contact and through contact with contaminated surfaces.

Findings further indicate that respondents highlighted fever, cough, shortness of breath, and fatigue (tiredness) among others as symptoms of covid-19 disease.

On how construction workers perceive management of COVID-19 at Tororo-Cement Round-About Construction Project, majority of respondents showed that there is a likely probability of getting infected with the novel coronavirus. In addition, majority of respondents revealed that contracting the novel coronavirus would be severe for construction workers.

In the current situation at the project site, study participants revealed that it is difficult to avoid an infection with the novel coronavirus. This result was justified by many more respondents who revealed that following the recommendations from authorities to prevent spread of novel coronavirus is not a common practice at the project area.

Study participants admitted that hand washing for 20 seconds, avoiding touching your eyes, nose, and mouth with unwashed hands, use of disinfectants to clean hands when soap and water is not available for washing hands, avoiding places where many people gather, drinking ginger tea, social distancing, and self-quarantine serve as effective measures to prevent the spread and infection of the novel coronavirus.

However, majority of respondents urged that washing hands often with water and soap for 20 seconds each time is inconveniencing. This was emphasised by over 65% of respondents who stressed that they don't see family and friends washing their hands frequently and hardly avoid crowded places.

5.3 Conclusions

The findings of the study showed that many construction workers do not know whether they have suffered a chronic illness before. However, the revelation by 12.1% of respondents that they have a history of a chronic illness puts the health of all construction workers at risk of contracting covid-19 infection.

Although majority of respondents indicated that they were aware of presence of coronavirus infection in Uganda and Tororo district in particular, the fact that a considerable percentage of respondents (10.6%) declined to comment on the matter means that some construction workers have not taken the disease as a serious risk that can affect the project.

Having revealed that they don't know whether they are sick or not, construction workers' plight shows that there is minimal or no testing for coronavirus among the workers and staff at the construction sites. This puts the project at a risk.

With respondents highlighting different groups of people amongst themselves who are at a very high risk of severe covid-19 infection, this study concludes that project workers who include people aged 60 years or older, people who have serious chronic heart disease, people who have serious chronic diabetes, people who have serious lung disease and people who have asthma among others are being put at risks.

Since results also show that majority of respondents acknowledged that the novel coronavirus is transmissible via droplets through coughing, sneezing or intimate contact and through contact with contaminated surfaces, the nature of construction works only requires well tested staff to avoid spread of the disease.

The fact that respondents highlighted fever, cough, shortness of breath, and fatigue (tiredness) among others as symptoms related to covid-19 disease means that they have access to information concerning coronavirus.

The likely probability of getting infected with the novel coronavirus by construction workers is perceived as a COVID-19 management risk at Tororo-Cement Round-About Construction Project. This means, therefore, that contracting the novel coronavirus would be severe forconstruction workers.

For the study participants' revelation that it is difficult to avoid an infection with the novel coronavirus in the current situation at the project site, it can be concluded that construction workers do not follow the recommendations from health authorities to prevent spread of novel coronavirus.

Although study participants admitted that hand washing for 20 seconds, avoiding touching your eyes, nose, and mouth with unwashed hands, use of disinfectants to clean hands when soap and

water is not available for washing hands, avoiding places where many people gather, drinking ginger tea, social distancing, and self-quarantine serve are effective measures to prevent the spread and infection of the novel coronavirus, majority of respondents urged that washing hands often with water and soap for 20 seconds each time is inconveniencing. This was emphasised by over 65% of respondents who stressed that they don't even see family and friends washing their hands frequently and hardly avoid crowded places. Basing on this result, this study concludes that construction workers have not made serious efforts to prevent severe attack from coronavirus.

5.4 Recommendations

Basing on the findings and conclusions from this research, project managers should liaise with health officials to establish whether construction workers have history of chronic illnesses. This would prevent management from putting the lives of construction workers at risk of severe coronavirus infections.

Since majority of construction are aware of presence of coronavirus in the country, project management should develop strategies for ensuring implementation of hand washing with water and soap at all times to prevent and limit the spread of the virus.

The project management team should ensure that all workers are subjected to covid-19 test before beginning to work to prevent them from contracting the disease while at the sites.

Ministry of health should speed up efforts to introduce vaccines against covid-19 to benefit groups of people who at high risk of contracting the virus. These groups include people aged 60 years or older, people who have serious chronic heart disease, people who have serious chronic diabetes, people who have serious lung disease and people who have asthma among others.

Project management should put in place means of disinfecting surfaces most used or touched by construction workers at all sites.

Construction project managers should provide to workers all information regarding spread, prevention and symptoms of covid-19.

Construction workers should prepare their bodies by eating and drinking well with a balanced diet to prevent severity of cpovid-19 disease in case of contraction of the virus.

Construction project management should ensure that water and soap are available at all times and ensure that all workers practise handwashing to prevent the spread of covid-19.

All covid-19 Standard operating procedures (SOPs) should be enforced at all construction sites to ensure reduction of risks of contracting coronavirus.

5.6 Areas for Further Research

The study was limited to one construction project site. There is, therefore, a need for further study considering more than one project sites that may be having different terrain and workers with different health conditions.

The study was also limited to few proportions and indicators of covid-19 risk assessment in the district. There is a need for future research to replicate the findings employing multidisciplinary measures of preventing the spread of covid-19 in wider coverage of construction sites in Uganda and Africa at large.

This study was limited to Tororo-Cement Round-About Construction Project. This makes the study limited to one construction site in the district and not in other construction areas in Uganda. There is a need also for a further study to be replicated in other construction projects and sites to ascertain the similarity and differences in the findings.

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